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AUTHOR	Mahlamaki-Kultanen, Seija
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ABSTRACT

This study examined the way qualitative data analysis software and virtual teaching methods can support the learning of qualitative research. Study methodology was based on phenomenology, and data were gathered in a pilot course on qualitative research methodology in which 22 adult part time graduate students participated. The course was built around a small-scale qualitative research project with qualitative analysis software. The most important result from the introduction of the qualitative data analysis software into the course was the emphasis it caused students to place on conceptual and theoretical thinking. What was really necessary was the goal-oriented use of only a few of the technical functions of the qualitative data analysis software. (Contains 2 figures and 10 references.) (SLD)

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Learning and Teaching Qualitative Research with Qualitative Data Analysis Software

Seija Mahlamaki-Kultanen

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Learning and teaching qualitative research with qualitative data analysis software

Mahlamäki-Kultanen, Seija
University of Tampere, Research Centre for Vocational Education, Finland
Seija.Mahlamaki-Kultanen@hamk.fi

1. Objectives and purposes

This article examines the ways qualitative data analysis software and virtual teaching methods can support the learning of qualitative research. The research questions to be considered here are:

1. What is the range of different experiences of doctoral students studying qualitative research methodology with qualitative data analysis software?
2. What are the pedagogical implications of these experiences?
3. What is the efficacy of teaching qualitative research methodology with the help of qualitative data analysis software?

2. Perspectives and theoretical framework

The recognition of the qualifications of a researcher should form the basis of teaching. Research skills and scientific giftedness are composed of both discipline-specific traits and those shared by all disciplines. The qualifications include creativity, original ways to observe and develop new constructs, scientific argumentation and the ability to detect systematic structures in the data, intuition, ability to interact with the studied individuals and the scientific community, and, especially in qualitative research, morality and aesthetic sense. (Innamorato 1998.)

The possibility to work on a shared research problem provides a fertile ground for the individuals to co-operatively develop their skills as researchers and grow into full participating members of the scientific community (eg. Borthick & Jones, 2000). Despite the fact that students learn better in participatory learning environments, most teaching is still lecture and literature based. This gap has been filled somewhat by the newer computer applications emphasizing qualitative analysis of research problems, which engage students in many kind of ways. The problem, however, is that little evaluative research has been done to assess the efficacy of these learning environments. This study which is to be described here builds on the few existing studies and materials available via commercial websites pertaining to the pedagogical efficacy of virtual qualitative research learning environments and data analysis software (Este, Sieppert & Barsky 1998; Salzman et al. 1999; Schoech, 2000). Fixed instructions and established assessment criteria are being looked for (Lincoln, 1995), but, until now, there is only little good background material about the practise of qualitative analysis.

3. Methods

The methodology of the study is based on phenomenography, developed by the Swedish researcher Ference Marton. He wanted to find out, how everyday people experienced different conceptual phenomena and to develop pedagogy according to people´s needs and own experiences. The practical procedures of the study are adopted from Ashwort and Lucas (2000).

4. Data sources

The data was gathered in a pilot course of qualitative research methodology valid for three study weeks in 2001/2002. The pilot group included 22 adult part time students, teachers and personnel developers, working on their Doctor's Thesis. Most of them had very little previous practical experience of handling qualitative data and analysing it. Few of them knew each others before the course. I was the teacher for this course.

The course was built around a small-scale qualitative research project with qualitative analysis software. Central themes during lectures (30 study hours) were: the importance of prior schemas and theory as both a guide and a hindrance in a research process, the choice and confrontation of the subjects, the gathering and assessment of the research material, a couple of alternative methods for analysing data (thematic analysis, grounded theory, phenomenography, interviews), acquiring and using feedback, reflective thinking, logical argumentation and the possibility of diverse options. Practical examples were adopted from Maxwell (1996). The course consisted of six contact teaching periods, autonomous assignments and supporting literature, self-evaluation of own competence as a qualitative researcher, writing informal learning diaries and online counselling via e-mail.

The data for the present study was gathered from the student assignments and diaries and my own teaching and research diary. Altogether the students´ data consisted of 82, typically 1-2 pages long single-spaced essay-like texts. I analysed the data inductively between the lectures with qualitative data analysis software Nvivo 1.2 using visual codes, coding systems, simple searches, visual models and different networks. The methodology and practical procedures used were reflected together as well as were my interpretations validated step by step together with the students in an ongoing process.

The gathering of research data progressed through the following stages:

1. Before the course students wrote a short story called "Qualitative data analysis software and the learning of qualitative research". These first essays were not so personal as necessary to understand their experiences in a phenomenographical analysis.
2. Students formed groups and analysed together a qualitative research article.
3. Students wrote new essays about "Qualitative data analysis software and the learning of qualitative research" but now gave more emphasis on personal experiences and meanings.
4. Students wrote essays about "The possibility of understanding between the lecturing researcher and students in our case".
5. Students evaluated themselves and the efficacy of the course with a 360-degree assessment tool prepared according to the competence needs mentioned by Innamorato(1998).
6. Students wrote short discussions from their viewpoint for a research article which was the beginning for this manuscript.

The anonymity of the students was partially saved and found important.

5. Results and conclusions

To reach mutual trust and bracket prior thought is essential in phenomenographical research. The first essays dealt typically with the personal experiences of the nature of qualitative research and information and communication technology as separate items.

The range of emerging experiences naturally occurring in the data is presented in the order of their frequency although each of them is as meaningful to be reflected in teaching:

1. Qualitative research is scientific thinking
2. Qualitative research is demanding
3. Qualitative research is original
4. Qualitative research is informed by diverse, holistic, and humanistic epistemology.
5. Qualitative research is cooperative.
6. Qualitative research is a process.
7. Qualitative research is inductive.

The link between information technology and qualitative research was mostly dealt with as a positive challenge to maintain human touch and avoid mechanisation of the analysis. Two persons wrote openly in the beginning that they did not like so much the idea of bringing information technology everywhere.

I reflected on the results with the students but, according to phenomenographical principles tried to avoid affecting too much the personal opinions of the students. It was most important for me to grasp and fully understand the experiences of the students of the items to be learned to fully understand the actual learning processes of them.

The analysis of the next essays about the same topic, own learning, were more personal and revealed the personal processes of learning. They are displayed in table 1.

The frequency of experience in descending order, 1. =the most common	Experience	The connection of the experience with qualitative data analysis software and information technology
1.	Learning is an affective experience (positive, caused by deep understanding of the topic under study, and arousing of a new interest in it.	Qualitative data analysis software enhances understanding, discovery and feelings of happiness. It encourages reflection and gives stimulus to thinking. It enhances scientific imagination by making alternative analytical methods more accessible.
2.	Learning is developing in scientific thinking (becoming aware of own thinking, learning to trust on it, becoming critical). The teacher is needed to give stimulus to thinking.	Qualitative data analysis software, lists and models stimulate thinking and set the human brain free for scientific thinking from the overload of too many details saved only in one's own brains.
3.	Best learning is learning by doing.	Qualitative data analysis software makes it possible to conduct or follow real analysis also for the student, because it is transparent unlike traditional methods which are also often extremely slow.

4.	Learning is like a process.	Information technology in general and qualitative data analysis software makes the process possible.
5.	Learning is cooperative knowledge building. The meaning of the teacher is in securing the prerequisities of the process.	Information technology makes the communication possible and convenient.
6.	Learning is forgetting the old. (Reflecting the prejudices and learning away from the principles and procedures of statistical research).	Information technology belongs only to quantitative research.
7.	Learning is demanding, even more demanding than learning statistical research. Much time and struggle are needed. Learning causes also negative feelings and stress.	The interface of qualitative data analysis software programs seems to be quite difficult for some in the beginning.
8.	Learning is capturing the scientific theory.	The visual models of qualitative data analysis software enhance conceptual thinking.
9.	Learning research with information technology is natural and normal.	The student is used to use information technology in work and studying. There is nothing special that it accompanies also qualitative research.
10.	Learning is critical inquiry.	Qualitative data analysis software is a partner in dialogue. Diverse options and the possibility to chooce between them exist.
11.	Learning is directed according to my own interests.	
12.	Learning is directed according to my own values basis.	

Table 1. The experiences of learning qualitative research and the connections with qualitative data analysis software and information technology

Unlike my earlier teaching experience, no one wanted to learn single methods or tricks or just the methodology of the own thesis.

The students evaluated their own competence before the course and the effectiveness of the course by 360 degree assessment (Innamorato 1998). Result is displayed in table 2.

Competence evaluated	Self evaluation of the competence before the course, mean. 1= reasonable, 5= excellent. N=19.	Self evaluation of the efficiency of the course on each competence, mean. 1= reasonable, 5= excellent. N=19.
Educational science, subject knowledge (not an independent target during the course)	2,3	2,5
The ability to detect patterns in data.	2,3	3,4
Cooperative skills with the people taking part in the research.	2,3	2,7
Cooperative skills with the scientific community and professionals.	2,6	2,5
Ethical sense and morality.	3,1	2,4
Originality, intuition, creativity and aesthetic sense.	2,6	3,4
Different methods.	1,3	2,4
Conceptual thinking, scientific problem solving.	1,9	3,7

Figure 2. Students´ selfevaluation of own competence before the course and of the efficiency of the sourse on each competence.

Many of the students wrote also in their diaries of the limits of learning in one course and the importance of their future learning.

6. Educational and scientific importance of the study

Somehow paradoxically, the most important result from the introduction of a qualitative data analysis software into teaching was the students´ emphasis on conceptual and theoretical thinking which. According to Paul and Kofi (2001) should always form the basis of teaching.

Information technology or qualitative data analysis software are helpful but do not educate anyone (Fraser & Deane 1999). Personal councelling and lectures proved very necessary in this growth process like in the study of Järvenpää & Knoll (1998). For students familiarising themselves with a virtual environment and research forum, it's use has to be pedagogically justified and carefully supervised. Hypewords do not guide all students to the essential information (Palmquist 2001). If the new virtual teaching methods can help adult learners to make their own viewpoints and experiences heard and as a topic of co-operative discussion, they can make a real difference in learning (Hakkarainen 2001). What was necessary was the goal-oriented utilisation of only a couple of the technical functions of a qualitative data analysis software.

In open learning and research environments, the ethical issues and the informed consent of the subjects have to be especially observed (Schrum 1995). Personal experience of being really involved in all the time changing roles proved to stimulate deep reflection, both enthusiasm as well as some resistance. The instructor has to consider the students ' different personal histories, readiness to study, and computer skills. Therefore, models of studying have to be developed one by one in collaboration with students.

In addition to the models of studying, the study groups must come to a mutual understanding of the types of discourse that are going to be used for different purposes in the learning environment. Several students informed that they found it hard to write freely in formal studies about their personal and private thoughts. Still writing, both personal and professional, is an inevitable part of qualitative analysis and should form an important part in teaching.

Qualitative research process is time consuming and each teacher has to find the balance with time, either to demonstrate one or few qualitative data analysis software or to let the students put their own hands into the real business of analysis. The joy of discovery and meaningfulness of studying are worth the trouble.

7. References

Ashwort, P. & Lucas, U. (2000). Achieving Empathy and Engagement: a practical approach to the design, conduct and reporting of phenomenographic research. Studies in Higher Education 25(3), 295-309.

Este, D., Sieppert, J. & Barsky, A. 1998. Teaching and Learning Qualitative Research with and without Qualitative Data Analysis Software. Journal of Research on Computing in Education 31(2), 138-154.

Fraser, S.P. & Deane, E.M. 1999. Educating tomorrow´s Scientists: IT as a toll, not an educator. Teaching in Higher Education 4(1), 91-106.

Innamorato, G. 1998. Creativity in the development of scientific giftedness. Roeper Review 21(1), 54-59.

Lincoln, Y. 1995. Emerging criteria for quality in qualitative and interpretative research. Qualitative Inquiry 1(3), 275-290.

Maxwell, J.A. 1996. Qualitative Research Design. An interactive approach. Sage Publications. Applied Social Research Methods Series. Volume 41.

Paul, J.L. & Marfo, K. 2001. Preparation of Educational Researhers in Philosophical Foundations of Inquiry. Review of Educational Research 71(4), 525-547.

Salzman, M. C., Dede,C. Loftin, R.B. & Chen, J. 1999. A Model for Understanding How Virtual Reality Aids Complex Conceptual Learning. Presence: Teleoperators & Virtual Environments 8(3), 293-326.

Schoech, D. 2000. Teaching Over the Internet: Results of One Doctoral Course. Research on Social Work Practice 10(4), 467-486.

Schrum, L. 1995. Framing the debate: Ethical Research in the Information Age. Qualitative Inquiry 1(3), 311-326.

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